THE ORTHOPAEDIC FORUM

COVID-19 and Orthopaedic Surgery

Experiences from Iran

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The first case of coronavirus disease 2019 (COVID-19) was reported in December 2019 in Wuhan, People's Republic of China[1]. On February 19, 2020, the first reports of COVID-19 were officially announced in Iran, including the death of 2 patients. This created the suspicion that the health-care system in Iran was not keeping up with the speed by which COVID-19 was spreading. In other words, COVID-19 had probably entered Iran much sooner than we were able to detect it.

The disease outbreak has caused a pandemic, which has created mass hysteria and panic worldwide. As of April 21, 2020, the virus had infected >2,397,216 people worldwide and had caused >162,956 deaths[2].

As of April 21, 2020, >83,505 cases of COVID-19 had been documented in Iran, and, according to the Iranian Ministry of Health (MoH), there have been at least 3,739 deaths[2]. These numbers are expected to increase as the disease is spreading with high transmission rates and is involving more and more individuals on a daily basis.

In the beginning of the outbreak of COVID-19, confusion existed on different levels of the health-care system in Iran, especially in orthopaedic departments. Although on the surface the COVID-19 pandemic seemed to be unrelated to orthopaedic departments since these patients and surgeons do not face infectious disease on a routine basis, widespread fear gave way to many poorly considered decisions, including the decision of many prosthesis companies to stop their services immediately, even before any official statements from the MoH or the hospitals were released to cease elective surgeries.

Hospitals and Orthopaedic Surgeries During the COVID-19 Outbreak

Two weeks after the detection of the first cases of COVID-19 in Iran, the Iranian MoH sent an official letter to all health-care centers to stop all elective surgeries in all private and governmental centers. Two days after this letter, the private-sector hospitals obtained permission to restart their elective surgeries, perhaps due to their lobbying with the MoH. However, all governmental health-care centers discontinued all of their elective orthopaedic surgeries, and only trauma patients were seen. In the governmental sector, no minor elective surgeries, even those that would include a hospitalization of <24 hours (e.g., removal of plates and implants or carpal tunnel release), were performed. In the private sectors, each institution made its own decision of whether or not to perform specific elective surgical procedures. Interestingly, the spread of the virus during March 2020 coincided with the Iranian New Year holiday known as Nowruz, during which the usual elective surgeries that are performed in private and governmental sectors are postponed. Because of mass fear and concern regarding the spread of COVID-19, and the fact that some orthopaedic surgeons contracted the virus, most private-sector hospitals paused their elective surgeries for a few weeks before completely stopping all of their surgeries at 1 month after the first official reports of COVID-19 in Iran. Subsequently,

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all of the empty hospital beds were designated for the treatment of patients with COVID-19. The number of trauma cases in Iran is much higher than that of other regions in the world, and all orthopaedic surgery procedures that are related to trauma are still being performed. However, with the practice of self-quarantining in Iran, the number of traffic accidents has decreased because fewer people are commuting, and this has decreased the number of trauma-related surgeries.

In addition to the legislation by the MoH, perhaps the move by orthopaedists and patients to practice self-quarantining has been the most important factor that stopped elective surgeries

Orthopaedic Clinics During the COVID-19 Outbreak

In the initial 2 weeks of the COVID-19 outbreak before the announcement from the MoH to stop elective surgeries, governmental orthopaedic clinics were busy as usual, and no specific protection was considered for physicians and patients. However, with the passing of time and the announcement from the MoH, the number of referrals to orthopaedic clinics decreased substantially, mainly due to mass fear in the community. Subsequently, stations were designated to check for fever in patients and their escorts in all clinics. With regard to personal protective equipment (PPE), physicians were given N95 masks (although not in every center in the country), and latex gloves and disinfectants were placed in all of the clinics. Patients were advised to buy protective gloves and masks for themselves, which caused a lack of availability. Because no official ground rules or instruction were given to private orthopaedic clinics by the MoH, they were free to continue treating patients. Almost 3 weeks after the first case of COVID-19, almost all physicians were convinced to close their clinics, and some started seeing patients online with the use of special applications and through social media, although not enough infrastructure exists to facilitate such services. More importantly, the number of orthopaedic patients who benefited from this type of consultation was very few.

Activities and Education During the COVID-19 Outbreak

Self-quarantine measures that were taken in the community gave orthopaedic surgeons an opportunity to experience life like other people in society, away from their busy lives in the operating rooms. Everyone became united in staying at home in order to stop the spread of the virus.

With these measures, the Iranian Orthopaedic Society (IOS) and its branches created multiple social media groups to maintain a panel for the exchange of scientific ideas and critique and to promote research among orthopaedic surgeons. The Iranian Ministry of Communication provided some limited free use of the internet to the public, which covered the need for internet to some extent. Many orthopaedic personalities in the country also aided in preparing brochures and video clips to invite people to stay in their homes and self-quarantine. With the unexpected pause of all surgeries and routine activities, orthopaedists were confronted with a unique situation. Orthopaedic residents became demoralized as they became more idle because of the cancellation of classes and hospital grand rounds; however, the continuity of trauma surgeries and seeing patients in the emergency department maintained a level of practical education. From another point of view, the lack of a protocol from the MoH for the care of trauma patients with regard to COVID-19 created a concern for health-care providers.

In our country, according to the MoH, residents in specialties unrelated to COVID-19 (including orthopaedic residents) are not obligated to be present in emergency departments and in COVID-19-related wards, although some do participate voluntarily. PPE for orthopaedic residents includes normal surgical masks and does not differ from that of other personnel. The main policy for general hospitals with many different departments (including orthopaedic departments/wards) was to ensure the longest distance possible between wards that were designated for COVID-19 patients and wards that were unrelated to COVID-19, and orthopaedic residents are only obligated to respond to consults from the non-COVID-19 wards.

In some medical universities across the country, virtual education (e-learning) has been started[3,4]. With regard to orthopaedic residents in some universities such as the Iran University of Medical Sciences in Tehran, case studies were begun using various social media platforms. Online courses in the orthopaedic departments, which were mainly done with the use of webinars, are held for 2 main reasons: (1) to maintain orthopaedic education for residents and undergraduate students, and (2) to create a platform to increase awareness and to exchange up-to-date information regarding COVID-19. There have been large disparities across the country and among universities for applying this type of e-learning, which has been based mostly on their existing facilities.

Additionally, the IOA released some guidelines to the MoH. These guidelines were classified in 4 sections: (1) educational activities, (2) outpatient management, (3) inpatient management, and (4) guidance for paraclinics. The IOA and its subspecialty divisions have further maintained their case studies using e-learning platforms, which has been a successful experience.

Conclusions

The COVID-19 outbreak, which was concurrent with the Iranian New Year, created an unprecedented experience in the lives of many orthopaedic surgeons in Iran. Orthopaedists had the opportunity to tend to their normal chores of everyday life, which they usually would not have time for, and to take part in large campaigns related to community health, mainly concerning COVID-19. The role of orthopaedists has been shown to be much more pronounced than what is usually thought of as only tending to fractures. As the

great poet Saadi Shrazi said, "Human beings are members of a whole, in creation of one essence and soul." Orthopaedists, along with other specialists who are battling COVID-19 hands-on, can be important influencers in the war against COVID-19. ■

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